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IDENTIFICATION AND INTERPRETATION OF TECTONIC FEATURES
FROM ERTS-1 IMAGERY

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October 1972
Type 1 Progress Report for Period July 31 to September 30, 1972

Prepared for

GODDARD SPACE FLIGHT CENTER
Greenbelt, Maryland 20771

by

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ERTS-1 IMAGERY Progress Report, 31 Jul. -
30 Sep. M. Abdel-Gawad (North American
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Type I Progress Report for Period July 31 to September 30, 1972

Title: Identification and Interpretation of Tectonic Features from ERTS-I Imagery.

NASA Contract No. NAS5-21767

GSFC ID number: PR001 Dr. Monem Abdel-Gawad, Principal Investigator.

Problems: Because of the shutdown of the RBV camera, there was a delay of one month in the receipt of imagery. The first data was received in low priority areas. Receipt of data was resumed on September 28, 1972.

Accomplishments: Earthquake epicenters were plotted on five RBV scenes covering eastern Utah and northeastern Arizona. Faults inferred from the imagery were compared to geologic maps and correlated to earthquake epicenters.

Plans for next period: We plan to concentrate on California imagery.

Significant Results: An important fault zone, which we strongly suspect is seismically active was identified on RBV images (ERTS E-1013-17305 (101, 201, and 301) in northeastern Utah. This fault zone is not shown on the Geological Map of the United States (1) nor on the Tectonic Map of North America (2). When we plotted the epicenters of historic earthquakes and their magnitudes on an overlay corresponding to the scene, we found a major earthquake cluster up to magnitude 4.9 through which the fault zone passes. This suspected active fault zone runs in a northwest-southeast direction cutting across the Patmos Mountains and the southwestern side of the East Tavaputs Plateau from near the junction of the Colorado River with the Dolores River to and beyond the town of Dragerton, Utah. The fault zone which we will subsequently refer to as the Dragerton fault zone appears to be an element of a major tectonic lineament which includes the Moab fault, Salt Valley, Spanish and Lisbon Valleys.

Because of the limited imagery coverage we have obtained so far, we cannot ascertain at this time the extent of this lineament or its tectonic significance. We suspect however that it constitutes a major crustal break in the Colorado Plateau.

Significant Results (continued) Within the Dragerton fault zone, a recent fault segment running northwest about 10 km north of the town of Dragerton shows geomorphic features such as stream offsets suggesting right lateral fault movement on the order of 1 km or less.

- (1) Geologic Map of the United States compiled by George W. Stose and O. A. Ljungstedt: United States Geological Survey; Scale 1:2,500,000 (1960).
- (2) Tectonic Map of North America compiled by Philip B. King: United States Geological Survey; Scale: 1:5,000,000 (1969)

Published Articles: None.

Recommendations: No change in plans.

Standing Order Forms: Attached.

Descriptor Forms: Attached.

Retrospective Data Request Forms: Attached; ordered September 12, 1972.

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ERTS 1 STANDING ORDER FORM

(See Instructions on Back)

[illegible]

(See Instructions on Back)

ORGANIZATION North American Rockwell Science Center

ID _____

PRODUCT ID (INCLUDE BAND AND PRODUCT)	FREQUENTLY USED DESCRIPTORS*			DESCRIPTORS
	Clouds	Mountain	Lineament	
E-1013-17303-2 01	x	x	x	Drainage basin, lake
E-1013-17312-2 01		x		Lake, river
E-1013-17314-2 01				Poor image
E-1013-17321-2 01	x	x		Drainage
E-1013-17330-2 01	x			Poor image
E-1013-17332-2 01	x			Poor image, coastline
E-1013-17335-2 01	x			Gulf, island, coastline
E-1013-17341-2 01	x			Coastline, inlet, bay mouth bar

*FOR DESCRIPTORS WHICH WILL OCCUR FREQUENTLY, WRITE THE DESCRIPTOR TERMS IN THESE COLUMN HEADING SPACES NOW AND USE A CHECK (✓) MARK IN THE APPROPRIATE PRODUCT ID LINES. (FOR OTHER DESCRIPTORS, WRITE THE TERM UNDER THE DESCRIPTORS COLUMN).

MAIL TO: ERTS USER SERVICES
CODE 563
BLDG 23 ROOM E413
NASA GSFC
GREENBELT, MD. 20771
301-982-5405

September 12, 1972

ERTS User Services
Code 563
Building 23, Room E411
NASA/Goddard Space Flight Center
Greenbelt, Maryland 20771

Dear Sirs:

Please find enclosed an ERTS DATA REQUEST FORM. Please forward the required data.

Thank you.

Sincerely,

Monem Abdel-Gawad
PR001